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PRACTICE AND THEORY.

A theoretical man is not often a practical one. He views things in the abstract and does not make sufficient allowances for the differences between it and the practical.

A chemist in the laboratory finds the composition of plants and manures as well as soils; from these he concludes that certain substances are best adapted to the growth of certain plants, utterly ignoring the fact that the great one of nature is essentially different. Soils under natural conditions have certain fixed peculiarities that may be ameliorated. Take the pipe clays for example; lime, straw, wheat and pine, may ameliorate the tenacity, while sand alone applied in immense quantities so as to form a large proportion of it will overcome this patent obstacle to easy tillage. Ashes and lime will break down coarse sands, but without the addition of clay will never stop their tendency to rapid evaporation.

Again, soils differ widely, even on the same farm, in their nitrogen, phosphoric acid, and potash, just as crops do. Now to apply the same manure to all soils, or to attempt to grow all kinds of crops on one soil with the expectation of getting the largest possible return would be sheer folly. We do not make our cart shafts or wagon tongues of pine; we do not use oak for hubs, because of the unsuitableness of these woods for the purpose, as evidenced by long experiences. Yet we apply our manures and fertilizers with an equal disregard for their fitness.

Lawes and Gilbert, in England, applied one kind of manure to one soil for 42 years with no perceptible benefit. A piece near it was left for 42 years unmanured and its crop did not decrease. Analysis told the tale of the results, the land was rich naturally in the plant-food needed, in fact, had it in great surplus, far more than the wheat had used, or could use for a hundred years to come. Hence every pound of manure applied was that much thrown away, unless it changed the friability of the soil sufficiently to pay its value; and of this there exists no proof, since the wheat yielded equally well first as last, which it would not have done with any marked change in this direction.

Thousands of tons of manure are thrown away by farmers every year just like these, because unsuited to the crop and the soil.

Light soils do not want a manure whose tendency is to increase evaporation. Nor cold soils, those that are decomposed slowly. Sometimes a well rotted or decomposed manure

will show different results from one of the same kind, but more chaffy when applied to the same.

Of all manure stable manure is best understood as a farm manure, although the main reliance of truckers and market gardeners, whose crops demand a quick acting, forcing manure for crops of quick growth and early maturity. In no case that has fallen under our observation and practice on widely different soils, has the grain yield of cereals after its use been up to its reputation.

It is a question well worth an attentive, careful consideration whether many farmers would not be materially enriched by selling their unsuitable manures, those not the best for their soils, and purchasing those that are. In another article, analysis will be given to show the "faith that is in us."

A. G.

SOILS AND THEIR CLASSIFICATION.

Recently we gave Lupton's classification of soils. As some may read Sir Humphrey Davy's recommendations about soil-improvement, we give his, as upon it depends the values of the latter.

SANDY, SEVEN-EIGHTHS SAND.—All sandy soils should be divided into calcareous and silicious. The former derived from limestone rock, the latter from pure flint rock.

CLAYEY SOIL.—One containing one-sixth impalpable earthy matter, effervescing slightly with acids.

LOAMS.—Limited to soils containing one-third earthy matter, freely effervescing with acids.

PEATY.—Containing one-half vegetable earthy matter.

GRANITES.—When particles of quartz and mica are found abundantly in the soil.

Prof. Wiley, of the Agricultural Department in 1885, classified soils, and it may be considered the one now used by scientific writers as follows:

Loams, a mixture of sand, clay, and humus. *Light* when sand predominates; *heavy*, when clay. *Light* and *heavy* do not refer to the actual weight of the soil, but to its tenacity and its resistance to the use of the implements of husbandry.

The Chemist of the New Jersey Experiment Station divides the soil of that State as follows:

Granite, limestone, slate, red sandstone, slate, trap rock, clay district, drift, marl region, tertiary, alluvial, soils.

Dr. Higgins, once State Chemist of Maryland, divides her soils as follows:

White oak or pipe clay, red and yellow clay, black gum swamp soils, light sandy soils.

These classifications become important when we would economically measure any of them; for Liebig, the great German author, pertinently observes: "Many conditions are necessary for the life of plants; those of each germ require special conditions, and should but one of these be wanting, although the rest be supplied, the plants will not be brought to maturity." The distinguished English chemist, says: "Soils, owing to the presence of clay, have the power to absorb from solutions the very substances that are of the most value to the crops, namely, ammonia, potash and phosphoric acid. On the other hand, sandy soils containing but little clay are not capable of fixing the valuable salts, whence the desirability of manuring such soils often and lightly to prevent waste."

Having decided the exact kind of soil, adapt your crop and manures to it if possible. Cold soils and cold manures are not for quick-growing crops; neither are hot soils and manures for the slow-growers. E.

MANAGEMENT OF THE MARYLAND TOBACCO CROP.

The very low prices which have prevailed for a number of years for all agricultural products have caused much anxiety in the minds of some of the best thinkers in the land. Much has been written and said upon the causes that have led to it and the proper remedy to be applied, with a view of restoring the tillers of the soil to their former independence and prosperity.

It is, I believe, a settled fact, that the success and prosperity of any country, depends, to a great extent, upon the agricultural classes—hence we find the most enlightened nations of the earth, recognize this principle and use their best efforts to foster and promote the agricultural interest of their country. The income derived by the farmer from the cultivation of corn and tobacco for the last decade has not paid in many cases the expenses of cultivation and given a comfortable support to the family of the husbandman.

If this be so, then no one need be surprised to find thousands of the best farms in the country covered by mortgages, and in many cases far above their cash value. Should there be no change for the better, and that at some early date, for the debtor class, their farms must be sold to meet the demands of the creditor. This is certainly a most deplorable condition of things, and yet, I think, no one who has informed himself and considered the subject will attempt to gainsay the facts herein

stated. The causes which have led to this unfortunate state of things, whether from class legislation or the burdens imposed upon the landed interest by heavy taxation, or the heavy duties imposed upon the prime necessities of civilized life, and the remedy to be applied in order to remove the evil, I must leave to the patriotic statesman and the most enlightened men of the present generation to remove. Pardon my digression, as I simply intended to make a few remarks in which I will give my views of the unfortunate condition of the tobacco planters of Maryland growing out of the extremely low prices, at which their principal monied crop has been sold in the past few years and to suggest a remedy, which, in my judgment, if carried out with care and enlightened intelligence and energy by the tobacco growers of Maryland, will in time, accomplish great pecuniary benefits to the cultivators of this important industry.

During this great depression in the values of tobacco, the great bulks of the Maryland crops have been of an inferior grade, which have always brought low prices, but the colored and bright article has been disposed of at very remunerative rates.

The system practiced in Maryland of hanging their crops in comparatively open barns and leaving the curing to the vicissitudes of the weather, wet or dry, or, as some express it, to nature or luck, should have been abandoned at once after the abolition of slavery and a more enlightened system by which their crops could be saved from the injurious effects of wet and foggy spells, which never fail during the curing process to do much damage to the leaf in color and quantity. The evil effect of this system is perfectly evident to all who grow the weed, or sell it on the Baltimore market, and yet, is it not strange that, with the experience of years and the admitted losses under this old-fashioned system, that the farmer should sit quietly down and see the work of a year injured, perhaps one half in value, in the space of a few days, when the same might have been saved in the best possible manner by preparing, in advance, the means to meet and counteract those annual occurrences?

The crop of tobacco, the growth of 1890, is admitted by all to have been one of the finest and richest crops that has been harvested in Maryland for many years. This crop is now being shipped to this market, and the damage from the wet and damp spell of last fall is clearly and distinctly marked upon every sample drawn in the Baltimore ware-

houses this year. And although the texture is remarkably good and far above the average of many crops that preceded it, yet it is greatly deficient in the clear, bright color it would have shown if the atmosphere had been dry during the curing process.

The loss the farmers of Maryland have sustained from the above causes in the single crop of 1890, is not less than \$300 to \$400 per hundred, amounting to several hundred thousand dollars. Notwithstanding this damage by wet weather last year, it is admitted that the crop now coming to market is by far the best we have had in many years.

Now what is the proper remedy for this great evil? I answer, artificial heat, as practiced by the tobacco planters of Virginia and North Carolina, with so much pecuniary profit. Those people, by their enterprise and energy, are accumulating wealth. Our tobacco growers in Maryland are gradually getting in a worse condition year after year. These facts ought to arouse our people from their present lethargy, and with the spirit of enterprise and energy, go forward with a determination to save their crops in the most approved style and turn everything they grow to the very best account. G. W. DORSEY.

Calvert county, Md.

THE VALUE OF STRAW.

Farmers, as a rule have always entertained the idea that every pound of straw grown on a farm ought, as quickly as possible, to be utilized in the manure pile.

While this may seem correct, it can easily be proved by facts and figures that the system is wasteful and wrong and money thus wasted, if saved would not only buy enough manure or fertilizer to keep the farm in high condition, but also leave a good round sum as profit for the farmer.

I propose to take the present price of rye and rye straw, and show how farmers can realize a greatly increased income on every acre of rye and "not rob his farm," but keep it in a high state of cultivation, by placing on it just as much manure or fertilizer as if he had adhered to the old plan of throwing his straw crop in the manure pile.

The following facts and figures will prove these statements correct. One acre of land will yield 15 to 20 bushels of rye, and one ton of straw. The present price in New York markets of rye is 75 cents per bushel, and the price of rye straw, threshed straight and bound, is \$19.00 per ton.

Ten acres of rye, yielding 15 bushels to the acre, if sold at 75 cents per bushel, will amount to \$112.50, and the ten tons of straight threshed and bound straw, if sold at \$19.00 per ton, would amount to \$190.00, making a total of \$302.50 realized from the ten acres of rye and straw.

According to Prof. E. B. Voorhees, the New Jersey State Chemist, the real manurial value of rye straw in the manure pile is only \$2.00 per ton; consequently, if the old plan is followed and the ten tons of straw deposited in the manure pile, the value of it there, according to Prof. Voorhees is only \$20.00, while, if the ten tons of rye straw were sold, it would amount to \$190.

Take the manurial value of the ten tons of rye straw, which is \$20, and with it buy stable manure or commercial fertilizer, and it will enrich the farm to the same extent as if the whole ten tons of straw had been deposited in the manure pile, and yet leave in the farmers' pocket a neat profit of \$170. This while enriching the farmer surely does "not rob the farm."

The above facts, I think, prove conclusively that it is wasteful and wrong to continue in the old way of threshing the straw and wasting it in the manure pile, or, if not absolutely wasting it in this way, reducing its value to two dollars per ton, when the same straw if threshed straight and bound would bring in New York markets \$19 per ton.

I will admit to thresh rye by hand is slow and expensive, and if the ordinary spiked cylinder thresher is used the straw will be broken and its marketable value destroyed—hence I advocate the use of improved machinery, and in this case I recommend the self binding rye threshers, of modern introduction, which not only thresh without injury to the straw but also clean the straw from dust, and deliver it thoroughly threshed and rebound ready for marketable purposes.

Farmers should study this matter, and, as it is an opportunity to greatly increase the profits of the farm, they cannot too soon discard old foggy methods and wasteful plans.

JOHN BUTTERWORTH.

New Jersey.

EVAPORATION.

Evaporation is a subject little studied and less understood. It depends on the angles at which the sun's rays strike the land; it depends on the moisture of the air whether these rays are retarded and weakened, and as to whether their heat, when radiated, is accelerated or hindered. It depends on the wind's velocity, and upon the mechanical condition of the soil, whether fine or coarse-grained, whether cultivated or fallow, for it would be folly to suppose that radiated heat from a grass field when carried over one of fine tilth did not affect its evaporation. As a starting point, it is said by Prof. Langley that the surface temperature of the earth is from 59° to 60.8° F.; that we have radiated from the sun heat enough to melt 119 feet of ice annually, and that the reradiated heat from the earth has wave lengths unknown to those coming from the sun; and that the water vapor of the atmosphere affects heat as radiated from the sun. Prof. Russell, of the signal service office, calculated the evaporation to amount to 48.1 inches at Baltimore; 35.6 inches at Norfolk; with a rainfall of 43.59 and 47.74 inches respectively.

Gage, in his Physics, gives the following rule to calculate it: "The rapidity of evaporation varies directly with the temperature, amount of surface exposed, and dryness of the atmosphere, and inversely with the pressure upon the liquid."

The effect of tillage on the evaporation of the soil has been tried in Connecticut at the Storrs Experiment Station with striking results upon heavy and light soils. The following

tables give the result from August 15 to September 30:

	Light soil.	Heavy soil.	Light soil.	Heavy soil.
Not stirred.....	1.16 inches.	1.69 inches.	3 lbs. 5 oz.	4 lbs. 13 oz.
Not stirred.....	1.46 inches.	1.63 inches.	4 lbs. 4½ oz.	4 lbs. 9 oz.
Stirred 2 inches...	.63 inches.	1.39 inches.	1 lbs. 13½ oz.	3 lbs. 10½ oz.
Stirred 4 inches...	.77 inches.	1.33 inches.	2 lbs. 3 oz.	3 lbs. 8 oz.

In other words, the heavy soil lost 4-10 of water and the light 6-10 lbs. an inch of water less when stirred than when not.

In New York, the experiment of stirring and not stirring the soil has been tried for its effect upon the moisture, where it was tried with half-inch deep, 2 inches, 4 inches, and mulched with short oat straw an inch, and not stirred at all, with the following result: The half-inch had nearly 1½ pints per cubic foot; 2 inches, nearly a quart; 4 inches, more than a quart; and the mulched more than 2 quarts more than the unstirred.

Calling a good rain one inch to the acre, or 100 tons, which is equal to 25,200 gallons, or 800 barrels, then the half inch had 258 barrels, the 2 inch 322, the 4 inch 412, and the mulched 799 barrels to the acre. Another thing is plainly deducible: cultivation beyond an inch does not give a proportionate increase of moisture. Indeed, beyond 4 inches other experiments show a decrease. If, as known, the mass of corn roots are above 4 inches deep, then to cultivate that deep is to mutilate them and shorten the crop, as has been seen hitherto. It must not be forgotten that the above figures simply represent the amount of moisture that will, or will not, render available the plant food that is in, or has been supplied to, the soil. There is, indeed, mention of drought; there is none that serious injury was sustained.

Another point suggests itself: What would have been the effect if this soil had received the inch of rain and it confined to 4 inches deep, evaporation going on as usual, and exposed to the rays of the sun?

True, Prof. Loomis states that it requires the sun's rays 4 hours to penetrate a soil 3 inches deep, but we have no means to estimate the heat that the water in combination received. Whether the firing of corn

from over wet or dry land is due to the same cause is doubtful. Fired from wet, it never recovers; from drought, if not too far gone, it will, under favoring seasons, improve astonishingly.

And this brings us to its habits of root growth. Experiments in Illinois prove that on a black prairie loam most of the roots grow between 3 inches and above 4 inches. Even the spur or air roots go down below 12 inches, so says Prof. Porter, of the Minnesota station, in a "rich sandy soil" composed of clay and loam.

How far these facts may be confirmed in our worn-out eastern soil is somewhat problematical, although a very careful noticing of various styles of tillage lead to their confirmation. A week's wet weather in the latter part of summer frequently shows the white roots all over the rows. Many years ago a farmer of wide experience said he would never cut a corn root if it could be avoided, nor did it matter if the corn became grassy after the tassels and silks had made their appearance. E.

STRAY NOTES.

"Corn gets half its nitrogen from the air." How? Will X. please explain. If true it will be news to a great many of us. I have seen a great deal that evidently needed more than it was getting, and I attributed it to a poor soil; perhaps it was poor air. Artificial fertilizers may not pay on a corn crop or land that will make 50 bushels of corn per acre, but will pay abundantly if this same land is put in potatoes or cabbage. I have cultivated just such land and unless I had a heavy clover sod to turn under I could not get a good crop of potatoes on it, and even then the crop was much benefitted by an application of potash. On any land that it will pay to use home-made manures, it will pay to use purchased manures, if the right kinds are used.

According to "Hayseed," Carroll county must be blessed or cursed with a wonderful variety of weeds, some of which are new to us. What sort of a "Methodist" is that "Methodist weed, M. E., M. P., or some other brand of Methodism?" Had he not better rechristen some of the others and have some Baptist, Episcopalian and Catholic weeds? If it is a regular old-side shouting Methodist weed, I would advise Hayseed to give it up, for he will never exterminate it. If it was merely an Episcopalian or a Catholic run wild he might do something with it, but a camp-meeting Methodist weed has evidently come to stay.

But joking aside, no matter how clean farmers keep their fields if the road-sides are foul with weeds of any denomination there will be no getting rid of them, and in old settled farming sections it is the roadside which is the great nursery of weeds. This is one great argument in favor of no fences and keeping stock off the roads. If a man's land runs to the roadside without any fence to obstruct, he will be much more likely to keep the roadside clean. And if there is no roaming stock on the road, many weeds which depend upon them for distribution of their seeds will be less numerous. Let us have clean roadsides and no cattle on them.

John E. Cake is getting down to facts. The man who pays now \$30 per ton for a commercial fertilizer is either buying high-priced nitrogen which he could get cheaper in other ways, or is paying double the value of the phosphorus or potash he gets. So far as grain and grass crops are concerned, the use of nitrogen fertilizers would soon become a thing of the past if farmers fully understood the value of correct rotations. There are plants which accumulate nitrogen in the soil, whether they get it from the air or not, and by a proper use of these there ought to be no need for any man growing grass and grain to buy nitrogen.

Why should your correspondent, "L. B.," want to plant seeds of onions "for sets?" By sowing seeds of the Italian varieties, it is easy to grow full sized onions in Maryland or anywhere else from the seed. If extra large onions are wanted sow the seed first of October thickly in a sheltered bed. In spring transplant them to heavily manured soil, or start them in a cold frame in February and transplant first of April, and you will have larger onions than by raising sets of the Northern sorts and keeping them over a year.

Raleigh, N. C. W. F. MASSEY.

THE FARMERS' INSTITUTE AT TOWSON.

Feeling predisposed to the grip, and having been told the water was bad at Towson, and the substitute taken for it worse, we decided to get the information expected at the farmers' meeting held there from the newspapers, in which we found the orator's way of testing and treating cows for milk laid down with precision.

We would have to make a radical change in our cows to follow him to the letter. He says the cow that spurts two or three months an uncommon amount of milk is very deceptive—never buy her. If eight months, she will be a burden to you, and he will not have a cow in his herd that does not come up to the standard of 6,000 pounds of milk in 300 days; that the milk ought to be weighed, for quart measures are different between here and Boston, (a quart isn't a quart, but a pound is a pound.)

We have a dozen cows, and only one of them is the standard kind, and we never before thought much of her; but with good feed in variety she has maintained a standard of 1½ gallons milk a day for the last five years of 365 days, with one of 366. She drops off a little just before calving, and has no spurt after, but comes up gradually to the standard. The others will spurt from four to five gallons per day, and with the same feed will keep spurting until they have an inside demand that reduces the outside supply until within six or eight weeks of the time to transfer the inside customer to the outside—when we give her a rest.

We have been heretofore in favor of the spurters. Although our standard cow comes the nearest to a machine, we think she could be worked up to two gallons per day for 300 days, which would be only about fifty gallons more for the 365 days. There has been a Baltimore county cow that has spurted 34 pounds of

butter in a week, and now there is a standard machine that can turn out any quantity desired, and the only difference perceptible is that the machine does not shed its hair, which is liable to get in the butter from the cow. We have also heard of machine-made milk that is said to be hard to distinguish from the natural product. Although we are great lovers of nature, we have to acknowledge that for standard quantities machines are the most reliable.

The orator also says a dairyman cannot afford to keep a cow that does not give a certain amount of milk (there is no question about that), and he can make one cow do what two ordinary cows do, (it may be rough on the one cow, but a saving of the other cow, if not the feed). Very truly, he says, garlic has some influence on the milk as to odor and taste. We can testify to that, too; but our preference is to have it in the soup instead of milk. In conclusion, we think the milk business and the road question have been ably discussed, and have not the least doubt that the former requires good cows, and in order to have good roads, MAKE THEM GOOD, for it is generally conceded that the best in the long run is the cheapest. But, at the same time, when one has not the wherewithal to pay for the best, he ought to feel more comfortable to be out of debt with a second-class article.

JOHN E. CAKE.

POULTRY YARD.

POULTRY NOTES.

My fowls are still keeping a good record in the egg laying business, though not equal to that of last month. Then the average was sixty eggs per day, now about fifty. But a number are on duty in the hatching house and some have been marketed. I always, about this time of the year, dispose of the older ones of my flock. They are now bringing a good price. There seems to have been a boom in both poultry and eggs this winter. May it continue, for the good of the farmer, for many years to come. I have not had very good luck with young chicks. The weather has been too wet and cold. There has not been enough sunshine for them. Young chicks, to thrive well, if hatched out so early, ought to have artificial heat. Another winter I am going to have a brick flue run horizontally through my hatching house so as to provide the necessary warmth whatever the state of the weather outside. But I should not make any great outlay of money, for I do not believe in the plan of spending two dollars to get one. The farmer cannot afford to do this kind of business. Necessity impels to contrivance, so my improvement will be homemade and not require a great many eggs or spring chickens to pay for it. Costly outfits are all well enough for the amateur who can afford to make such ventures whether there be success or failure, but they will not do for the man whose sole purpose is to make the business pay. As a general thing the most money from poultry keeping is made by those who move with caution, economy and judgment. Success in this line requires hard common sense, com-

bined with constant attention to all its details. A poultry establishment will not run itself.

Some of my neighbors are talking of getting incubators. They are welcome to them for me. I don't think any new fangled plan of coaxing the young chicks out of their shells can supersede the natural one so long established. Incubators have been in use for over a century in Europe, and by this time we ought to have had great and convincing results from them. Yet we do not hear of any large establishment being kept up for a long period. Much skill and ingenuity have been expended on these contrivances, and a great many patents have been taken out for them, and every new machine claims to be an improvement on its predecessor. But some how they fail when put to a practical test. I am going to let the old hen have a fair show, and yet awhile shall trust to her ability to do the work of hatching.

Virginia.

S. N.

TOPICS FOR THE SEASON.

Many find it necessary at this season to yard the fowls in order that the garden and grain crops near the poultry house may not be disturbed. Hens that are well fed will do very little injury to either unless close at hand; in fact, they will perform untold service by destroying myriads of cut worms and slugs; yet if it is thought advisable to confine them during seeding time, with a very little additional pains the supply of eggs need suffer no interruption. Indeed, some breeds appear to lay even better when a large flock is divided into small lots and kept in separate runs, where their individual wants can be more judiciously supplied. The brown leghorns notably have made their best records as egg producers under these circumstances. The experience of F. J. Kinney, the veteran importer of these fowls, has been similar to my own in this respect. Mr. Kinney keeps his leghorns in comfortable buildings with run-ways twelve feet by twelve, about a dozen occupants being allowed to each division, and never permits his fowls to run at large. Under these conditions he has probably given the laying qualities of these brown beauties a more thorough test than any other breeder, his best hens showing the remarkable average of 242 well formed eggs, and better, to their credit in a year. Moreover, I have found his strains unusual for their stamina and vitality, many of my hens with this blood in their veins attaining the age of eight and ten years without deteriorating in their astonishing prolificness. A reasonable deduction from the above is that if brown leghorns can be so enormously prolific under such circumstances, it would seem possible to keep any breed of layers possessed of sufficient inherent vital power with profit in limited quarters.

Of course, upon a farm, where much would otherwise go to waste, chickens may be kept more economically by allowing them their liberty, but for residents in the suburbs and small towns who keep a number of fowls, it would undoubtedly be better to divide the flock into small lots and provide yards for them, using

the rest of the premises for other purposes. The building need not be an expensive affair, protection from rain and wind being the chief requisite, while yards constructed of laths would serve all purposes. If the fowls are of a high flying breed, they can be easily caught upon the roost after dark, and the clipping of one wing each of a large flock will occupy but a few moments.

However, whether the fowls are yarded only for a short time, or all the year around, they will need regular attention, and must have a variety of food in sufficient quantities to produce eggs. I feed three meals a day, and only as much at one time as they will eat up clean. It requires experience to detect just when sufficient has been fed, and even that may fail. As I am constantly handling my fowls, I quickly discover when they are falling off or are becoming too fat. At present they are fed scalded middlings in the morning, raw or cooked vegetables for the midday meal, and whole grain at night, wheat or oats preferred. Very little fat producing food is used at this season unless the fowls show that they are falling off too much in condition, in which case either cornmeal is substituted for the morning feed or whole corn for the grain in the evening. Grain is thrown where the hens will have to scratch for it, thus providing health-giving exercise for the greater part of the following day and depriving them of the time to acquire the evil habits learned in confinement.

Except the cracklings from the annual supply of lard, very little meat is fed to them. In the spring a few feet of each yard is spaded, then occasionally they are allowed, pen at a time, to run in the garden in search of worms. Clean drinking water, cracked bones and oyster shells are provided for them. The refuse from the kitchen, potato and turnip parings, cabbage leaves, etc., are all relished by the chickens. In fact, if, on my way to the yards, I see anything going to waste which I think the fowls would appreciate, I take it along and over the fence it goes. If possible, it is good for yarded fowls to be turned out where they can pick grass for a few minutes occasionally. It is astonishing what quantities of it they will consume in a short while and how they seem to enjoy the privilege. I know from experience that this is not absolutely necessary, but with my present arrangement of yards I am enabled to do it without fear of other fowls mingling with my thoroughbreds. My poultry house and yards are now at one corner of the garden, so that the breeding pens can either be turned into the latter place, or outside upon a luxuriant growth of orchard grass. Days when the plow is going in the garden my leghorns are allowed, pen at a time, to run over the new turned mold and search for worms; then, once in awhile, each pen is turned outside for a short time toward evening to pluck the tender leaves of the orchard grass; and, whether following the plow upon the inside or half concealed in the tall grass without, they are alert, active, beautiful. I find them profitable, and with the above management, how they do lay!

H. R. STEIGER.

HORTICULTURE.

THE VALUE OF AN ORCHARD.

A good orchard on a farm is an advantage which is not generally estimated as highly as it should be. How often the remark is heard among thoughtless people, "It is too long to wait for the fruitage of trees and somebody else will come along and enjoy it, it may be." But this is a most selfish consideration, and worthy only of the narrow, covetous disposition which is always grasping for the lion's share and worrying lest others may get a part of the good things of the earth. The supplies which a carefully tended orchard yields to its possessor are a continuous source of satisfaction. They furnish an enjoyable wholesome diet, being susceptible of so many desirable ways of preparation for the table, whether fresh or dried or canned, and may be made a source of no small part of the yearly income from the acres.

People who are looking for new homes in the country are always desirous of getting with them ample and thrifty orchards, and are willing to pay more for them on that account.

It is not too late to plant out trees this spring if attended to at once.

EVERY FARMER HIS OWN POMOLOGIST.

A singular fact, as impressive as it is true, is that so few of our general farmers grow even half of their fruit, and many none of what they consume.

Moreover, not a tenth of our rural people raise a third of the fruit that they should. We often find on farms of fine fields and high bred and well kept stock a weak attempt to grow some fruit, but very seldom do we find it done on a thorough going, practical and economical plan.

In nearly every case even a half acre cannot be fully given up to a few trees, but other crops must be placed between the rows to "occupy" the ground that the trees do not actually shade with their spreading limbs. It never seems to enter the mind of the grain or live stock farmer, that the orchard, vineyard and berry patch are of equal importance in providing well for his table and in making life happy. These are commonly looked upon as being things to look after when there is laxity in the field work, or when they cannot do anything else—simply the side issues of the farm. When thus treated they will continue to be mere "side issues" on the table and in the cellar at winter time. No results of worth or merit come without painstaking effort applied at the right time. The farmer must learn when to plant, prune, cultivate his fruits, and then *do them* at the proper time, even at a loss of a few hours or a day from the field. It is a matter that requires some study to be able to direct labor properly and to be able to reach the best results. Some of the common errors made and hints on the selection of varieties; pruning, culture, arrangement, fertilizing, insects, fungous diseases and preventives and benefits to the children are considered in this paper. How many thousands of trees of new and untried varieties that cost exorbitant prices, \$1, \$1.50, \$2 and even \$2.50

per tree, are planted by the amateur and novice every year! Also, how many thousands of these trees are failures because of ill treatment, unsuitable latitude or aspect! Why don't the average farmer think for a moment and turn his back to all agents who propose to make his home an Eden in a year or so with all the foreign varieties of fruits? Think! Think! What are Experiment Stations for if they are not to relieve the planter from spending money and time in trying new varieties and in telling him what new things are good and which are failures?

The old well known and standard sorts that cost from a nickel to twenty cents a piece are the kind that, by all means, I urge everyone to plant till they have received definite knowledge concerning any new variety that may be lauded and lithographed all over the land by avaricious and often unscrupulous men. New varieties are multiplying at such a rate that the most enthusiastic tester has to employ every flying moment to keep up to the never ending array. This mania to get before the public something new, (peerless, earliest of earlies, wonderful, mammoth, giant, rust proof, lightning, sorts)—is certainly overdone, especially by those who care only for a new form, to which can be given a new high sounding name, but, in reality, may be inferior to old sorts. We need careful selections, and hybridizing to improve our fruits and vegetables, but it should be done with great care and by conscientious hands.

Another error many fall into is the selection of too many varieties and, consequently, planting out too large an orchard for family purposes, and, for the time likely to be allotted its proper care. The following number and varieties I consider best for family purposes:

APPLES.—2 Early Harvest, 2 Red Astrachan, 1 Carolina Red June, 1 Sweet Bough, 1 Summer Rose, 1 Maiden's Blush, 2 Gravenstein, 1 Fallwater, 1 Smokehouse, 2 Wine Sap, 2 York Imperial. These sixteen trees, planted 30x30 or 24x36 feet, will occupy only one-third of an acre. When properly pruned this distance is ample for perfect growth and productiveness. These varieties will give a succession from June till April.

PEARS.—1 Summer Doyenne, 1 Dearborn's Seedling, 1 Wilder's Early, 1 Doyenne d'Ete, 1 Beurre Gifford, 2 Duchess d'Angouleme, 2 Seckel, 3 Lawrence, 1 Buffum, 1 Idaho, 1 Winter Nelis. These 15 trees will give the best flavored pears in the thousands of varieties, and fill a season from July to March.

PEACHES.—1 Amsden, 1 Early Rivers, 1 Troth, 1 St. John, 1 Mountain Rose, 2 Crawford's Early, 2 Reeve's Favorite, 2 Crawford's Late, 1 Stump, 1 Smock, 1 Chair's Choice, 1 Salway, 1 Bilyen's Late. These are among the very best varieties for family use, and a succession of fruit from June 25 to November. Plant 18x18. These sixteen trees will occupy one-eighth of an acre.

PLUMS.—1 Wild Goose, 2 Wayland, 2 Wooten, 1 Indian Chief, 1 Lombard, 1 Blackman, 1 Shropshire Damson, 1 Washington, 1 Richland, 1 Prince's Imperial Gage. Plant 15x15 feet and they will occupy one-sixteenth of an acre.

CHERRIES.—Two Black Tartarian, 1 Governor Wood, 1 Napoleon Bigarreau, 1 Belle de Choisy, 1 Dyehouse, 1 Early Richmond, 1 Olivet.

GRAPES.—Two Champion (black and early), 2 Brighton, 4 Concord, 2 Catawba, 4 Delaware, 2 Goethe, 2 Maxatawny, 1 Moore's Early, 1 Niagara, 2 Norton's Virginia, 4 Worden. Plant these 10x10 feet, and they will occupy one-eighteenth of an acre, and should bear, with proper care, every seasonable year after they are three years old, about 415 pounds. This is certainly all that any family of moderate size could use.

BLACKBERRIES.—25 Early Harvest, 25 Wilson, 25 Lawton. Plant four feet apart in rows eight feet apart, or all in one row. These vines should furnish on an average about four bushels per year.

RASPBERRIES.—25 Souhegan (black cap) late, 25 Cuthbert (red cap) early. Plant 4x8 feet.

STRAWBERRIES.—100 May King (perfect), 100 Bubach No. 5 (pistillate).

The varieties being properly selected, the next thing to do is to prepare the ground for them. This is a matter where many make very strange mistakes. Of all things that are least understood, are the relations of the plant to the soil in which it grows. How a plant feeds, where it feeds, on what it feeds, when it feeds, are questions on which many entertain the vaguest notions in the face of developed science. I have not space to elucidate on these points in detail, but will simply say, in brief, that a plant feeds by delicate hair-like microscopic bodies on the finest rootlets by an osmotic process of absorption. These bodies and rootlets are more numerous within the first ten inches of soil than they are deeper down. A plant feeds on some thirteen different inorganic substances, all except three being in most soils abundantly supplied. The three that are often deficient are nitrogen, potassium, and phosphorus. In some few soils one or more of these are amply supplied by nature, but on most soils plants are benefitted by an application of all of them, in certain quantities and in certain forms.

Perennial plants grow more or less the whole year. Root formation progresses to a limited extent in the winter season, and they grow considerably in the early spring before leaves are thrown out.

So far as is known, roots form best near the surface. The roots of trees planted too deep are sure to decay. Simply plow the orchard thoroughly, and mark off the same with the same plow in checks, and set the trees in the checks. Set the trees no deeper than the plow furrow. Trim off the mutilated roots and the whole top of the tree to within two feet of the ground for apples, ten inches for pears, and fifteen inches for peaches and plums, all with reference to about five live buds. Press the ground very firmly about the roots. Cultivate the trees thus set thoroughly, and it will be surprising to see what a growth will be made by the five or six buds.

THOMAS L. BRUNK,
Horticulturist of the Maryland Agricultural Experiment Station.
College Park, Md.

THE CHERRY.

The cherry was first brought from Cerasus, a town in Pontus, in Asia, to Italy by the Roman conqueror Lucullus, and afterwards disseminated throughout Europe. Seeds of this fruit were brought to America soon after its settlement by the English and Dutch.

C. Laurocerassus, the common laurel, and *C. lusitanica*, the Portugal laurel, are evergreen species of the cherry, and are ornamental.

The German "kirschwasser" is the product of distilling the juice of the common black cherry. Maraschino, the celebrated Italian liquor, is also made by distilling the cherry juice, mixed with the leaves and kernels of the fruit, and honey.

This tree is very desirable for planting along road sides, and handsome profits have been realized from the sale of the fruit.

Many magnificent avenues of the cherry are to be seen in Germany and Switzerland. One avenue in the former country of upwards of sixty miles in length is lined on each side with magnificent specimens.

As this tree opens its blossoms very early in the spring, it should have a northern exposure to retard its growth until all danger of frosts is past. The tree in bloom presents a beautiful covering of white, which is highly ornamental. A good deep loam, well drained and moderately rich, is best for this tree, which can not thrive where it does not get thorough drainage. It would be best to select an incline to plant on, having a northern exposure. The tree is entirely hardy, and more injury is done by the freezing and thawing processes than by a continued freeze. Very little pruning is necessary, and all excessive cutting of branches should be avoided. It will be found necessary to prune out only dead and crossing branches, which should be done in midsummer, as if pruned in the winter season the juice flows, which is highly injurious. The stopping of the branches which are outgrowing the others by pinching in summer is almost all that is necessary, as by this means a beautifully formed head can be had full of bearing spurs. Very little manure will be needed. Bone dust and ashes are excellent fertilizers, and cause a moderate, well developed and fruitful growth. No excessive stimulating manure should be used. In old trees, if the bark be rough, and the trees barkbound, a wash of soft soap will relieve the trouble.

Strong growing varieties should be planted 20 feet apart; for slower growing kinds 18 feet will be sufficient.

The fruit should be picked with the stems attached, as the appearance is greatly enhanced and a more ready sale will be found. The flavor is greatly improved by placing the fruit in a refrigerator for about three hours before eating. No one who intends to plant fruit trees should neglect to select at least a half dozen of the best kinds, as they will prove a blessing to themselves and to their children.

The following varieties will be found admirable for this state, and, in fact, for many localities:

SWEET VARIETIES—Black Tartarian, Windsor, Coe's Transparent,

Downer's Late Red, Elton, Governor Wood, Napoleon Bigareau, Yellow Spanish.

SOUR VARIETIES—Morello, Belle Magnifique, Early Richmond, Montmorency, Reine Hortense, Dyehouse.

W. D. HAMILTON,
Govanstown, Md.

HOT BED FOR SWEET POTATOES.

The next job on the programme of spring work is the making of a hot bed for sweet potato plants. And it is not a difficult one. A pit dug in a well-drained soil with a sheltered and sunny situation, two feet deep and five feet wide, of the needed length, with plenty of forest leaves in the bottom and a depth of two feet of horse-stable manure upon them evenly tramped down, is the first step in the work. On the manure spread about four inches of fine rich mould and cover over closely with hay or straw until the manure heats, and the heat subsides to a gentle warmth. Then lay down the potatoes, just touching each other, and cover them with two inches of rich mould. Feel in the bed often to see that no more than the gentle warmth prevails. In a few days fine white roots will start out from the tubers and soon after the sprouts to make the plants will appear. As soon as they begin to break through the light layer of mould uncover and let in the sunshine, but cover well before nightfall.

There are several varieties of the sweet potato raised for the markets. The kind grown by the Jersey truckers are handsome in appearance, of a deep yellow color, plump in shape and highly esteemed for the table.

MICE AND MOLES.

During the last two winters our section of country has been remarkably exempt from severe freezings. At no time was the ground frozen more than a few inches in depth, and then for only two or three days; consequently, moles and ground mice, those great pests of the garden and field, were secure in their retreats from the effects of frosts, and we may surely expect their presence in greatly increased numbers during the coming spring and summer. Many of the early plantings of peas have been destroyed by these rooters, and acres will have to be replanted. Therefore, we suggest to gardeners and planters the advisability of steeping seeds yet to be planted, such as peas, beans, corn and melons, so liable to their depredations, in a solution of kerosene or carbolic acid, or both, and Paris green. A little trouble taken in this way at the planting time will save much disappointment and vexation after awhile.

HINTS ON GROWING VIOLETS.

There are, no doubt, a great many lovers of violets who are compelled to be without them owing to the distance they are from the places where they can be bought, and it is the object of these hints, to aid the admirers of these lovely little blossoms to grow their own and make them more appreciated still by their being a home production.

The varieties mostly used for winter blooming, come from and are descendants from those found in Italy. Perhaps the most valuable of these is Marie Louise, a deep purple in color. A sprout from it, Swanley White, is valuable owing to its pure white color. A comparatively new introduction, is de Parme, gives a color intermediate between others; it is a dwarf, stout grower and free bloomer, and appears to be somewhat earlier than any of the double sorts.

Select a well drained sheltered spot facing south; determine how many plants you want to grow, give two-thirds of a square foot to each plant and proceed as follows: Remove the soil from the space to be used to the depth of eighteen inches, and loosen the remaining bottom a foot deep. This is to be replaced with soil composed of old sod, four parts; well rotted manure, (two years old) one part; and, in case the sod is from very stiff soil, add about one-fourth sand to the whole. Work this over until it is thoroughly mixed; let the newly-made bed be four to six inches above the surrounding soil to allow for settling. Procure some healthy plants from the most convenient place and plant eight inches apart both ways; then give a good soaking of water to settle the soil around the roots.

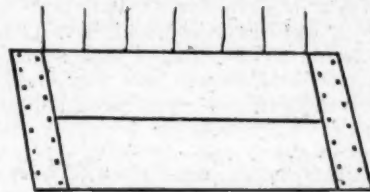
It would be beneficial to give a mulch of an inch of fine manure to prevent the soil from drying before the plants become established—keep the soil well loosened, but avoid doing it while the plants are wet with dew; do not disturb the top of the soil after the first of September, as it makes the flowers gritty and dirty. This will give the surface a chance to become firm by the time the plants commence to bloom.

Keep all runners pinched off as they appear, so as to concentrate all the energy in the crowns, as this is the part of the plant which gives the earliest and largest blooms; this last operation is very important.

About the middle of July procure some dense bushes or branches of trees seven or eight feet tall, trim the lower half close to the stem, and place them around the plants so as to shade them without preventing a free circulation of air over and around the plants. The shade must be removed and fresh branches provided about every three weeks until September. If the soil become very dry, give a good watering, though it is not the object to push a heavy growth in July or August, as violets are like most plants—they want a little rest—and these months are the most convenient for the grower to allow the rest. In September we have that cool, moist weather in which the violet delights, and if they have had good attention to this date the most critical period in violet growing is past. The plants will gradually spread until, by the end of the month, they should touch each other and be a mass of buds and begin to bloom by the middle of October. Early in the latter month make a box around the plants standing one foot out of the ground at the north end, and eight inches out of the ground at the south end, and get sash ready to cover at the first signs of frost. Give plenty of air on all bright days, and when the thermometer stands above forty-five degrees, a little air should

be given day and night. Place some coarse manure or leaves all around the frame to cover the ground two or three feet in all directions and reach to the top edge of the frame.

A simple and cheap covering for the glass is made as follows: Take lumber one foot wide, cut it nine inches longer than the sash and fasten two of them together by cleats, three inches wide at each end, both cleats to be on the same side; turn the boards cleated side up, and fasten to one edge pieces of tarred rope,



Shutter showing tar rope fastened to one edge ready for the straw.

and eight inches apart, and two feet two inches long. Lay on rye straw lengthwise of the boards, so that it will be three or four inches deep when it is pressed down firm; bring the tarred rope over the straw and fasten to other edge of the shutter; also fasten in four or five places between the edges, using 1-inch light wire staples, which can be bought at any large hardware store, for fastening the rope to the shutters, and trimming the ends of the straw even with cleats and you have a mat and shutter combined, quicker made than where the mat is made separate; more lasting and easier to handle.



Shutter showing straw laid on and tar rope fastened to both edges.

Cover the glass with this on all cold nights, and on cold, cloudy days if it is freezing hard, but uncover and give air at every opportunity.

In case the plants are frozen, it is best to leave the covering on until they thaw, unless it can be attended early, before the sun has much power, when they should receive air while in a frozen state, so that the thawing may be gradual.

Mice are sometimes troublesome; they can best be gotten rid of by soaking grains of corn in arsenic and placing it in the frames. It is well to keep some in at all times, renewing it occasionally as it becomes stale. The same position can be used for violets from year to year, providing the old bed is removed and replaced as at the first planting. ALOIV.

THE SPRING FLOWER SHOW.

The exhibition of the Gardeners' Club, to be held on the 22d and 23d of this month at the Academy of Music, North Howard street, in this city, promises to be a large and very handsome display, imposing in its extent and notable for the intrinsic excellence of the deposits.

It will include ornamental and flowering plants, cut flowers, designs, models of carpet beds, etc. A special prize of \$50, offered by Mr. Geo. W. Abell, for the best displays of roses, ought to draw out spirited competition.

A SPECIAL OFFER FOR APRIL.

As our readers know, it has seldom been our custom to offer premiums or other inducements to procure subscribers to THE AMERICAN FARMER, which we have always tried to make, and which as we believe, has always been worth the very moderate price charged for it; but, following the example of many similar publications, we now propose to offer our friends some slight recognition of their efforts to extend our circulation. We have procured a limited number of two beautiful pictures, works of real artistic merit, *fac simile* reproductions of great works of great painters, and worthy of a place in every home. These are the "RUSSIAN WEDDING FEAST" and "NAPOLEON AT FRIEDLAND;" the first representing an episode of peace and love, the other one in war; brilliant in color, beautiful in finish, and far removed from the cheap and gaudy "chromos" which have been scattered broadcast. During the month of April, each new subscriber, and everyone whose name is already on our books who will remit the amount in arrears, including the subscription for the current year, will be entitled to receive his choice of either of the two premium pictures, safely encased in a tube, and postage prepaid.

Premium Pictures—Descriptions of the Pictures—The Russian Wedding Feast.

Constantine Makoffsky, the artist of this great picture, selected for his subject the bride's first appearance in society. The husband and wife are represented standing at the head of the table and the guests and friends are merely welcoming the young couple to the feast. With drooping eyes and face covered with blushes, the bride, conscious that every eye rests upon her, is a picture of innocence and loveliness. On one side of the table are seated the male members of the two families, patriarchs with long beards and clothed in rich brocaded garments, while on the other side are the ladies, dressed in rare laces and wearing the peculiar head-dress of the country. This picture has been exhibited in nearly every city in the United States and is now reproduced by the aquarelle process for the first time. Its size is 21 by 28 inches.

Napoleon at Friedland, 1807.

In 1887 this great treasure of art was purchased by Mr. Henry Hilton at the sale of the Stewart collection for the sum of \$60,000 and presented to the Metropolitan Museum of Art, New York, where it is daily surrounded by groups of admirers. It is the most wonderful painting of a battle scene ever produced on canvas; for Meissonier has there portrayed, by the truth of his figures, clearness of touch, precision of details and marvelous delicacy of his finish, the whole scene with photographic accuracy. In this picture we see Napoleon at the height of his glory, saluting with imperial gesture his favorite regiment, the Twelfth Cuirassiers, as it sweeps by him to charge the Russians at Friedland. The reproduction of this painting in convenient size has never before been attempted, because of the large number of figures and portraits in the original. Reproduced by the aquarelle process in full colors of the original. Size, 21 by 28 inches.

The American Farmer.

"O FORTUNATUS NIMIUM SUA SI BONA NORINT
AGRICOLAE." — Virg.

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At the office of THE AMERICAN FARMER are located the offices of the following organizations, each of which its proprietor, Wm. B. Sands, is Secretary:

Maryland State Immigration Society.
Maryland State Farmers' Association.
Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, F. of H.

Entered at the Postoffice, Baltimore, Md., as Second-Class Matter.

BALTIMORE, APRIL 15, 1891.

OUR OFFICE.

Our friends will remember that our location has been changed, and that we are now to be found at the North-west corner of Baltimore and North streets, Baltimore, opposite the *Sun* and *American* buildings, with entrances at 228 East Baltimore and 6 North streets. The sign of "The Golden Plow", which has long designated our whereabouts, has a conspicuous and glittering place over our North street doorway.

PERSONAL.

The senior editor of THE AMERICAN FARMER entered his ninety-second year on the 10th of the current month, and we are sure many of his old-time friends will be gratified to hear that though his physical strength declines, as is natural, he maintains his general health, with a mind unimpaired and interested in all that occurs around him and in the world at large.

EXPERIMENTS ON THE FARM.

Through the centuries of man's history, thousands of discoveries, many of which were the results of years, even of life times, of patient, tireless experiments, have enlarged the boundaries of the arts and

sciences and contributed to human enjoyments and happiness all over the civilized world. And yet, everywhere, the chemist in his laboratory and the mechanic in his workshop are still experimenting unceasingly to make further addition to the many useful facts already made known, and doubtless the secrets of the vast realms of nature, even with all that we possess of them may still be hardly untouched. The printer, the worker in metals, the dyer, the soap maker, the perfumer and all the other artisans in trade and traffic have profited by great discoveries which have made possible the lightening and expedition of their labors. And why should not the farmers make more experiments to increase the stock of his knowledge and bring out more facts and useful data to help him in his toilsome struggle? We do not mean that he ought to go into experiments rashly or to waste money on them, but to make them judiciously and inexpensively.

Every farmer might, without much cost, satisfy himself in regard to the comparative values of different kinds of fertilizers by setting apart small plots of ground, all of the same texture and fertility, and applying them on a small scale for the growth of certain kinds of crops, keeping in a diary exact accounts of all important data connected with the experiments, such as manner of preparing the soil, kinds, quantities and costs of fertilizers applied, times of planting or sowing, yields of crop, etc. In this way a vast amount of real practical information might be gained through the years, and a saving of outlays made which would well reimburse any farmer for the time and trouble given. Thousands of dollars which are annually sunk by farmers over the country through investing largely in fertilizers in a haphazard way before being satisfied of the possibility of getting paying returns, might be by this plan prevented.

Let every farmer, then, who would progress in his methods and thrive by his business have a portion of his farm set off for experimental grounds, and there conduct experiments from year to year as we have above indicated, and in this step many valuable hints and much real help might be derived from a careful study of the bulletins which from time to time are issued by the directors of the different State experiment stations, and their work localized and appropriated.

MAKE YOUR HOMES ATTRACTIVE.

There are many reasons which ought to impel the farmer to a neat and orderly arrangement of all parts of his premises, whether it be his fields, his orchard, his stock, his buildings, his roads, or the immediate grounds about his dwelling place, if he has a proper regard for the good opinions of his neighbors and visitors, so far as skill and good management in his business are concerned. If he truly appreciates the delight and satisfaction which every one ought to derive from the consideration of work well and timely performed; or if he is looking forward

to the disposing of his home when the infirmities of age shall incapacitate him for the hard labors of years gone by, he will not live on from year to year and allow his buildings and fields to proclaim to every beholder the story of neglect and unthrif.

It is a good custom as soon as spring weather has fairly set in, to go the "grand rounds" and put every part of the premises in slightly array and order. Through the winter season always here and there some of the barn weather-boarding is apt to be loosened, some of the fence-posts get out of line and gates commence to sag. They need doctoring with hatchet and nails and spade. Fences on the lean are always unsightly. This work of necessary repairs need not take very much time if not put off too long. The main thing is to keep-up the habit of nailing up and righting up just when you see there is occasion for such care. A clean, well-kept lawn, with neat well-defined walks and not straggling over-grown paths, and a varied shrubbery add much to the attractiveness of a rural home. Visitors like to see them when they drive up to your gateway, and they like to see the fences in good repair and the out buildings whitewashed. Such improvements always give them favorable impressions of your capabilities and thrift as a farmer. Why should not the man who toils in the furrows, who sows and reaps the harvests that the hungry millions may be fed, have as pleasant and as slightly a place to dwell in as the thousands of non-producers in the cities who traffic in his commodities and often make more profit a day on them by merely buying and selling than does he with all of his summer and winter's toil?

BROOM CORN AND BROOMS.

Formerly it was the custom of farmers generally, to plant a patch of broom corn and to have it made up into brooms during the leisure of the winter. It was then considered one of the necessary farm economies. All the brooms for the house were in this way cheaply and plentifully supplied, and enough of them were sold to furnish many of the groceries and other family needs. But all this has been changed, and now a patch of broom corn is an exception almost over the whole of our Maryland and Virginia seaboard region. But why not get back to first principles and make your own brooms just as the early farmers did? The growing of the corn is not difficult, no more so than that of ear corn, only that when it first comes through the ground, it is more delicate and more difficult to keep clean of weeds. With a fertile soil, good culture and a favorable season, a luxuriant growth of the broom material may be produced. Plant in drills about three and a half feet apart and when the plants become well established, thin out to about three inches apart. At blossoming time go along the rows and bend down the tops, leaving about fifteen inches of stem to the brush.

When the seeds are ripe cut off the brush at the bends, and carry to a suitable drying place under shelter. As soon as convenient, hackle off the seeds and tie up in bundles ready for making up time in the leisure of winter. Be sure to get out all the seeds, so that no mice may gnaw the material, and keep dry to prevent mildew.

The evergreen variety is considered the best for general cultivation on account of color and quality of brush. It ripens early, grows seven to nine feet high, with brush of good length, fine and straight, and is always of a green appearance when ripe; never reddens under any circumstances, and has no center stalk, which is a most desirable point to broom corn growers and manufacturers. The seed will cost about forty or fifty cents a peck, which is enough to plant half an acre.

Any one of ordinary ingenuity can soon learn how to make a good broom. The simple device of a strong cord fastened to a beam above, with a stirrup at the other end for the foot with a hitch around a bunch of the broom will compress the butts sufficiently close to bind and make fast with stout twine or wire. After the butts are evenly cut off, drive in the handles, fasten with lath nails, then flatten out the round bunch in a clamp and sew through and through with a large needle and stout fine twine. Trim off the sweeping part and the broom is done. A little practice, together with the close inspection of a broom from a factory will make one sufficiently expert in a short time to turn off strong and neat work. The handles can be bought for a half cent each. Good brooms are always in demand and their making might be turned to a very important account by the boys on the farm.

Five or six hundred pounds of the broom may be raised on an acre, and will bring in the market, if properly cared for, from eight to thirteen dollars per hundred weight.

CORN FOR SOILING.

On account of the very unusual wet winter through which we have just passed, we may have a like extreme of hot and dry weather, which will make a short hay crop and a scarcity of pasturage. Therefore, we think it will behoove every farmer to provide for this possible contingency by planting an ample breadth of drill corn to cut for the stock about the time of silking. It will come in so opportunely, will make a grateful change for the animals, and amply reimburse for all the time and trouble bestowed upon it. Get the ground ready as soon as the weather will permit by good work with plow and harrow. Open the drills three feet apart, and be liberal with the manure if you would have a large yield of this valuable forage for the time of need.

EARLY FLINT CORN.—A few acres of early flint corn ought to be planted this spring. It will ripen in about ninety days and furnish feed for the horses before the main and later crop is ready. The Canada flint is an old and very desirable variety for the purpose.

THE WHEAT CROPS IN EUROPE.

The London *Standard* of April 6, publishes a long and careful review of the agricultural outlook, in the course of which it says that the steady rise in wheat revives the hopes of the English farmer, adding that wheat will probably reach the highest price in many years, the principal cause of rise being the failure of foreign crops. The wheat crops of France and Russia, according to the *Standard*, are much below the average, and the same paper says the deficiency will be at least 20,000,000 quarters, adding: "It is expected that cold winds and frosts have almost destroyed the French crops. Germany, Holland and Belgium all furnish pessimist reports. In Roumania there is a decreased wheat area, and in India there has been a bad wheat season."

"The only exception is Hungary, where there are better prospects; but it is almost certain that the world's wheat consumption will exceed the production computed. Whatever the magnitude of America's crop may be it will not be sufficient to cover the European deficit, thus compelling an extensive draft upon the reserve for the third year in succession."

AMERICAN PORK ABROAD.

It is announced that the German Government has definitely resolved to withdraw the embargo placed upon American pork. It is added, however, that the official notice of this withdrawal will probably be delayed for some time in view of certain negotiations which are still going on between the German Government and the Government of the United States through the United States Minister at Berlin.

It is also said that negotiations looking to the same end are progressing satisfactorily with the French Government, and that the first step will be the admission of live hogs.

APRIL CROP REPORT.

The April returns to the Department of Agriculture make the condition of winter wheat 96.0 and of rye 95.4.

The season for seeding was favorable over the whole winter wheat area; the soil was generally easily worked, the seed-bed prepared with unusual care, and sowing followed by gentle rains sufficient to properly pack the earth and insure prompt and perfect germination. On portions of the Atlantic and Gulf coasts the time of seeding was somewhat prolonged by occasional rains, but the delay was not serious, and the desired area was planted and in good growth by the advent of winter. Suitable weather and soil conditions enabled farmers of the Ohio Valley States to put in a full breadth under entirely favorable circumstances, and proper combinations of sunshine and moisture, which continued until cold weather, sent the plant into winter quarters with sturdy growth and good color. In portions of Kansas and Nebraska the prolonged drought of last summer extended into the period of seeding, interfering somewhat and rendering germination slow, but seasonable weather during the late fall and early winter was suffi-

cient to offset the disadvantage of a late start. The entire season was favorable in California, while in Oregon a dry seed-bed received moisture in time to secure good, though late, growth. The weather was generally mild over the whole area, and while the snowfall was comparatively light, it came when most needed, protecting the plant during the coldest weather. The Ohio Valley and trans-Mississippi States were especially favored, growth in many sections continuing through the winter, with sufficient covering when needed and an entire absence of damage from freezing and heaving. Brown and bare spots are seldom met with, growth and color being remarkably uniform.

The general average for condition is the highest reported for April since 1882, and the individual State averages are remarkable for their uniformity. It is sixteen points higher than last year, and three above the returns for 1889. A high April condition does not insure a large yield, but it indicates a strength and vitality which would enable the plant to withstand more than the ordinary vicissitudes of the season. The nearest approach to present condition during recent years was in 1884, when the largest crop ever grown was harvested, but similar high condition in 1886 was followed by a crop of little more than average proportions. The averages of condition in the principal States are: New York, 92; Pennsylvania, 97; Tennessee, 98; Kentucky, 97; Ohio, 98; Michigan, 93; Indiana, 90; Illinois, 97; Missouri, 96; Kansas, 99; California, 99, and Oregon, 97.

THE IMMIGRATION SOCIETY.—A meeting of the Executive Committee of the Maryland State Immigration Society has been called for Wednesday, April 29, at 11 o'clock, when it is presumed there will be some steps taken to lay out such work as is practicable for the association to undertake.

THE SOUTHERN HORTICULTURAL JOURNAL.—This publication, formerly edited by Prof. Thos. L. Brunk, now of the Maryland Agricultural College and Station, has been merged in *The American Garden*, a special Southern edition of which will appear regularly hereafter, beginning May 1.

FARMERS' INSTITUTES IN MARYLAND.—The series of these educational assemblages, under the auspices of the State Grange and the Experiment Station scored a marked success. The speakers were well received, their subjects were aptly handled, and the audiences thoroughly interested. Doubtless it opens the way to similar efforts next year.

ATTENTION is called to the advertisement of binder twine by Messrs. John T. Bailey & Co.

It will be noticed that Mr. F. T. Atkinson, in his advertisement of poultry, offers to prepay express charges to his customers.

HOME DEPARTMENT.

The What To Do Club.

OUR MOTTO.

Do what you can,
Not what you cannot;
Not what you think ought to be done,
Not what you would like to do,
Not what you would do if you had more time,
Not what somebody else thinks you ought to do,
But, do what you can.

ALL IN AN EGG SHELL.

Those who pay fancy prices for eggs that are expected to produce fancy chickens may be supposed to appreciate, to some extent, the value that lies in an egg shell, but, the majority of us, although perfectly aware that there are few preparations of food in which the egg is not an indispensable ingredient, are not, I fear, fully impressed with its importance. If I attempted to give a list of those cookeries of which eggs are essential elements, I would have to run the entire category of cook books. I will, therefore, have to confine myself to those methods of serving eggs in which the egg is the chief element. Some one has facetiously dubbed the egg *the lazy cook's friend*, probably because, at a moment's notice it can be served in some form to the hungry or impatient man whose coming has not been otherwise provided for, but, is it not a valuable consideration that so delicious a thing can so easily be made fit to set before a king or any other man?

I have frequently heard the remark "I always take my eggs boiled because in that way they cannot be spoiled," but tastes differ and most persons have a preference for hard, soft or medium boiling of them, and all require pains-taking for correct results.

It may not be generally known that eggs imbibe the flavor of anything strong or unclean standing near them, and if there is anything adhering to them when brought from the nest it should be removed at once. The freshness of an egg may be reasonably determined by its appearance, as there is a clear, chalky roughness which it loses within a week whether handled or not; further than that, no rule is reliable. If an egg is carefully kept in a cool, dark place, and regularly turned, it is good for cooking purposes as long as the yolk and white are clearly distinct; but, as I remarked before, it must be perfectly fresh for boiling, and the process of boiling requires considerable care. *Hard boiled* require twenty minutes' continuous boiling, or to be set on in cold water, brought to boiling and allowed to boil a few minutes. Either way will make the yolk mealy and the egg more digestible than if allowed only time to harden. *Soft boiled*, from one to three minutes. *Medium*, four minutes.

It should always be borne in mind that if the eggs or vessel are cold it checks the process of boiling; therefore allowance must be made. A good plan is to pour on hot water for a few seconds and then pour it off before they are set to boil. If eggs are liked with the whites only milky and the yolk not cooked at all, place the eggs in boiling water on the back of the stove, where they will not come to a boil, for about ten minutes. If it is desired that the yolks shall cook and the whites remain

soft and milky, do the same as above, only cover the vessel tightly. Egg boilers which are used upon the table without a lamp underneath cook them in that way.

Poached Eggs.—Have a shallow pan with a couple inches depth of boiling water slightly salted, draw it back from the fire while breaking the eggs into the water to prevent scattering, and then return it where it will boil slowly. Muffin rings placed in the pan and the egg broken, one in each, keeps them in nice shape. This method is also good in frying them. As soon as the whites are set, lift each egg carefully with a griddle-cake turner and place in regular order upon a warm dish in which there is a little melted butter, or what is better, place each egg upon a piece of toast, over which a tablespoonful of thin drawn butter has first been spread. Do not pepper any of these preparations of eggs, as pepper can so easily be added if wanted, and it spoils the appearance of them.

Eggs Baked.—Heat the dish on which they will be served; melt a liberal piece of butter on it and then break as many eggs as wanted (unless they crowd too much, in which event another dish must be used) set the dish in a rather quick oven; when the eggs are set, serve at once.

Eggs Fried.—Have the frying pan hot and about half an inch depth of lard, with a little butter added is better, break in the eggs carefully, leaving a little space between them; sprinkle a little salt over, and with a spoon drain the hot lard over each one till they are coated with a cooked film; then lift carefully with the cake turner upon a warm dish. Many people like them fried in the fat from fried ham, which is nice if pains are taken that it is not burnt.

Eggs Scrambled.—Beat as many as wanted just enough to break the yolks; turn into the pan when the lard, or lard and butter, is hot. Sprinkle with salt; stir just enough to keep it from burning and allow the mass to work evenly; remove while the eggs still look moist and are streaked white and yellow. A small quantity of cream added when partly cooked improves them.

Omelets. 1.—Pour one pint of boiling milk, in which a liberal piece of butter has been melted, over six well-beaten eggs; salt to taste and turn it into a hot, well-greased baking dish; bake in quick oven and send to table in same dish as soon as done. If overdone it becomes watery, like custard.

2. Beat separately whites and yolks of eight eggs; add to the yolks a tablespoonful of thick cream; while doing this have the pan heating—a long griddle is best—when the pan is in right condition, have another person distribute over the hot pan a piece of butter twice as large as an egg, so that it will not scorch while you mix the whites and yolks, and at once spread from one end of the pan or griddle to the other. Take hold of the handle and move it back and forth till the omelet is set, but not cooked through; sprinkle salt over it, and then with the cake turner and a broad knife begin at one end and roll it up; have a dish hot for serving and serve at once. *Time, tide and omelets wait for no man.*

Breakfast Salad.—Boil eight eggs twenty minutes; remove shells, cut

up in slices, keeping warm. Season with salt and pepper; have ready a sauce made as follows: In a tin or earthen saucepan put a piece of butter the size of an egg; as it heats put in a small quantity of onion chopped fine, or, if preferred, some parsley; then a dessertspoon of flour; rub together till well cooked; then add one half pint of milk slowly while stirring. Season to taste. Place on the dish in which it is served two or three pieces of buttered toast; spread on each a spoonful of the sauce, then a layer of the sliced eggs and sauce alternately, till all is used, leaving sauce for the top. Set in oven till heated through and serve.

I expected, when I attempted this, to embrace some, at least of each class of egg preparations, but find it too much for the allotted space and will, therefore, defer salads and other luncheon dishes till our next issue.

CERES.

AMONG the simple and inexpensive things that help to give a table a refined and tasteful appearance are the embroidered or simply hem-stitched square or oblong pieces of linen, alluded to with the cute device for holding flowers which was given in the last issue of THE FARMER.

Any kind of linen or momie cloth is nice for the purpose, but when it can be had as a rule, fine butcher's linen is best. It lasts a long time, does up nicely, and, if hem-stitching is to be done, the threads draw more easily than from other goods. The width of this linen makes two pieces large enough for the centre of the table or to place under the meat dish or before the one who pours tea and coffee, to protect the table cloth. Waiters being rarely used now, some provision for saving the cloth is quite necessary, and it is no less important to protect the cloth from accidental droppings by the carver. Time and taste can be much more profitably expended upon such tidies than those misnamed tidies which are distributed over the backs of chairs, where the head never touches, and which are more apt to fall into the seat or hang upon a coat-button than to remain in place. For the table they should have a deep hem, headed by a fancy stitch, never fringed. A simple star-like pattern worked in each corner, stem stitch or embroidery, with white or yellow silk, gives a very pretty effect.

James McCutcheon, 66 West 25th street, New York city, furnishes materials for such work reasonably, and sends a book with patterns and directions for the fancy open work on application, from which any apt needle woman can copy what she likes.

AMANDA A.

A STRANGER gives a good deal of good advice about our food, and I dare say we would be the better for following some of her advice, but I hope I shall not wound her feelings by giving it as my opinion that most people suffer from thinking too much about what they do or shall eat. From what I have noticed all my life, I come to the conclusion it is best to forget all about one's digestion while we are eating and partake thankfully and moderately of such things as are usually prepared for us.

No prescribed diet is apt to be in favor with physicians long at a time.

After a while they discover some effect from it which escaped their notice at first, and then they try something else. I am satisfied that the old adage has some truth in it, "What is one man's meat is another man's poison," and we need only take care to eat what is good of its kind and well prepared, as long as it seems to agree with us. Fruits, cereals, meats and vegetables, are all good at the right time, and those are most likely to remain healthy who take them right.

DOROTHEA DOOLITTLE.

TALKING of cleaning bedsteads makes me want to trot out my hobby. It is the subject of single sleepers. I hope to see the day when no double beds will be used. I don't think it is nice or healthy for any two people to spend hours together in the confined air between mattress and covers, nor to be exposed to each other's breath during the night. I might give scientific reasons for it, but those obvious to common sense are sufficient if we give it fair thought. I wish I could exchange every double bed I have for two single ones, since I can't afford to make the change otherwise. I have for years used every bed in the house as a single as far as they go, although it involves more work; and when my ship comes in I mean to have those single, enamel-painted iron bedsteads all over the house.

To be sure, two single beds will not stand as well in the room as a double one, but after awhile we will shape our bed rooms with those in view and then we will do better. Those beds are so easy to keep clean and so easily moved and adjusted that they must delight the hearts of housekeepers who have them.

HELEN BLAZERS.

WHEN at my best, I was never partial to crowds, and I was glad to escape the surging mass of humanity at carnival time. I have no doubt there were many funny sights but not at all like Mardi Gras at New Orleans. This was only the second venture of Augusta in that line and I suppose could be improved upon. If Try Again was here on these hills of sand she would often enjoy a good laugh at the "crackers" and colored people, and I have no doubt lose her temper, too. I find it very difficult to be amiable sometimes, especially with the rising generation. I heard one of their color say "there was nothing to be done with them but to pray for them and they were hardly worth that," at which I said Amen, fervently. I will relate a few incidents that came under my notice characteristic of the natives.

An old darkey was repairing a fence; there passed by two dusky damsels gaily attired in red, a la monkey. "Good morning, Uncle, how is you?" He viewed them very solemnly, then replied: "I thought the Master made women to be a help and comfort to man, but asking His pardon, when I looks at you I think He made a mistake." The damsels disappeared quickly and the laugh was hearty.

A "cracker" living near was called on by Prof. B.—in reference to the books necessary for her daughter. He gave her names and prices, mentioning a grammar as one. "Look here, I don't want my Jane to study no

Greek or Latin; she can read as good as anyone, and I want her to learn English and none of those no account things." During their conversation she mentioned having visited Savannah for the first time. "Did you see much of the city?" was asked. "Yes, I rid on the 'belt line,' it took me from one end of it to the other. I don't know why they called it the 'belt line' 'ceptin it was because they run it by belts. I seed some belts or straps in the middle of the cars, and people just a pulling on them." Imagine how difficult it was not to laugh outright, and how we did enjoy our laugh at home.

Called to prescribe for one of their daughters I saw at a glance that just an entire bath might be beneficial, but as I feared to shock them I ventured to recommend a hot foot bath. Imagine my surprise when the mother said: "Look a here! I have lived a long time, but I never heard of such as that and I haint going to allow no sich as that done to my gal if I die for it. I guess I'll give her some quinine. That won't kill her." I have often laughed at that funny scene and felt quite relieved when far away from the indignant mother.

At Christmas time one of the natives accosted me with "have you ary a frock you can lend me? I want one for to wear at Christmas, and I'd as soon wear your'n as anyones." I told her I did not lend my clothing. She replied, "you're mighty proud, then, I haint going to harm it." Her coolness was more laughable than the request. I think I lack the ability to picture these scenes as they ought to be, but I trust "Try Again" will enjoy them as much as I did.—A STRANGER.

I FEAR the sisters will think me negligent of my duty not to respond at roll-call, but pressing work at home has taken up so much of my time, then the gloomy weather, together with overwork rather affected my spirits, and I could not send out any brightness or information. When such is our state of feelings we had better remain in our shell than to cast a gloom over others. Ceres, as usual, gives us good suggestions about house cleaning, a work not at all to be desired, but a great satisfaction to us weak folks when it is over, as help is so inefficient these days. My experience in cleaning pantries, closets and garret is what the lady has to take a part of the work else order is neglected; and when all has been gone over she is about worn out in mind and body. I often read of housekeepers cleaning one room at a time and keep the rest in order, but I have never been able to do that, as the furniture has to be moved out to give room for cleaning. I intend trying Ceres's recipe for cleaning paint and windows. I think it must be excellent. I am sure we shall be busy making our gardens just as soon as the ground dries, for the season is so late.

Last year I planted peas in January, the weather and soil being just right. I was tempted to experiment, which caused my neighbors to talk not a little, as they thought of my wasted labor, but when my peas came into use and did so nicely the laugh was on the other side. Of course, the success was owing to the mild winter. This season I've not been

able to transplant, much less plant. I enjoyed reading A. A.'s description of her silk comforter; it reminded me of my work last winter. With assistance I made three slumber-rugs, but used all sizes of worster scraps—real crazy work—and put them together with fancy stitches, using zephyr instead of silk. The cost was nothing saving the lining and time, and we gentle folks do not set much value to our time, do we?

Not having had experience in luncheons I remain silent on the subject for fear of making blunders.

The design for table decoration in the last issue is indeed a pleasing and simple one, which I intend to imitate just as soon as the lovely blossoms come to beautify our country homes. I am particularly fond of using them on the table, they give such a look of comfort and refresh the weary mind; then they suggest topics for table talk, a place where pleasant conversation should always be encouraged.

I will again ask for the missing sisters. Cannot they come to the front? I don't like to see the vacancies made by their not responding to the call.

I have written the names of the sisters and brothers, better halves (glad am I to see them coming in, though late) on a large sheet of paper and credit them with each article they write. That suits me better than trusting to memory. I find "A. A." and "H. B." have written for each issue save one. "D. D." "S. L." and "A Stranger," save two issues. "Try Again" a little in the rear, but I rather think, from her name, she'll catch up after awhile. I hope "S. S." will join the club; her words were so helpful to us all, and I would think the toiling mother found comfort in them.

I have been anxiously waiting for some one to recommend a good Glee Book or College songs, something attractive for club meetings. We have such a delightful one in our neighborhood and would be so glad to get good questions for debates also.

Cannot some of you attend the next meeting, April 18th, 2.30 P. M., to be held at my home. "—Hills?" We would give you a cordial welcome, and I know you would enjoy the trip on the steamer on our majestic river.

Having detained you too long already with my nothings, I bid you good bye.

BESSIE.

THROUGH the kindness of "A Stranger," I have received several copies of THE AMERICAN FARMER. The notes on farming, stock-raising, etc., are so different from the methods employed here as to be hardly practical in this part of our country. But the Home Department, dear to the heart of every true woman, is alike interesting North or South, East or West.

I wonder if any of the members of "The Club" have seen a sod house? and if not, do they care to know how we live in a "little sod shanty on a claim" in Western Kansas?

To build one, the sod is first turned over with a common breaking plow, a foot wide, then cut with a spade into pieces two feet long, and laid up just like they do brick; the roof is of boards laid on the rafters, covered with tar paper, and one thickness of sod. A good sprinkling of shale

helps to shed the rain and hold the roof down, or the wind in one of its playful moods might lift it bodily from over our heads and set it down on the next quarter-section. Our house is 26 by 16 feet, and to support the long stretch of roof my husband built an arch in the centre, and I have curtains that I draw across when I wish to divide it into two rooms. Four large windows and two doors, the upper part of which are glass, give us an abundance of light and sunshine. The walls inside are plastered with mortar, made of native lime and sand, both found in large quantities in the draws; the lime is ready for slacking when dug, and forms a sticky, pasty mass when dissolved with water. Thus a kind Father provides materials for comfortable homes for His children in this treeless country.

Are you tired, or shall I go on and tell you how this sod house is furnished? In the west end I have two beds, an organ, sewing-machine, two rocking-chairs, a packing box fitted up with shelves for a bookcase. A bright chintz curtain keeps out the dust. The top of the box is covered with a red felt table cover, and on it stands my writing-desk and work-box. On the floor a rag carpet; red oil calico for window shades, over them short scrim curtains, and outside of all, crocheted lambrequins.

In the east end is the range, dining table, chairs, dresser, and a box fitted up for a clothes closet. The window sills, on account of the walls being so thick (two feet), are nice for plants, and I generally have the south and west windows full, not of rare exotics—just a few geraniums, a foliage plant or two, and two hanging baskets—one filled with a pink oxalis (my favorite), is a "thing of beauty" I never tire of admiring. Nor must I forget the pictures, for without them the walls would look so bare and home hardly like home. Two of them are large engravings, "Saturday Night" and "Shakspeare and His Friends." Two oil paintings, "A Winter Scene in England," and "A Fall Scene on the Rappahannock." A few family portraits—one has the artist's name on the back and the date, November, 1798, showing it to be nearly a century old.

A large pantry, built half-way across the east end of the house, but not opening into it, holds my flour barrel, cooking table, cooking utensils, and the thousand and one things we housekeepers find use for—and keeps my kitchen tidy. A few steps farther is a cave, out of which the milk and butter comes ice cold in the hottest weather. Firing and water are such important articles that I can hardly close without a few words in regard to our supply. Water is found in the draws at from ten to twenty feet; on the level, from sixty to a hundred, and some times nearly two hundred feet; here and there is found good soft water, but the most of it is very hard, seeming to have much iron in it. One cannot wash clothes in it, unless you admire an "ecru" shade, which they would have the first wash; and as for dried beans, you might boil them all day, only to find them harder at night than in the morning, if possible. The "buffalo chips" scattered thick over the prairies gave us plenty of

dry fuel the first year; since then the men folks have had to throw the chips out of the corral every few days to dry and to keep the cattle from tramping on them, then haul by the wagon load near the house and stack; so twenty-five head of cattle will supply a family with firing the year round without any expense.

MRS. OLIVER FUNSTON,
Gore Co., Kansas.

HINTS AND HELPS.

NOTHING.

HEAD AND BONES OF FISH.—Boiled fish may better be served without either; reboil head and bone, season; simmer until it jellies. Serve with points of fried bread, hot. For Aspic jelly, leave it to settle, and do not thicken, put in vinegar, garnish in mold. Grilled bone, is bone cut out when uncooked, and broiled.

COLD VEGETABLES.—Combine any morsels with salad sauce and bits of herring or fish. This is Russian salad. Steamed or baked in a mould without sauce, but seasoned and mixed with dripping, it becomes a macedoine.

OYSTERS LEFT OVER.—Pickle them with apple peel, vinegar, red pepper, etc. Chop with a cup full of rolled bread crumbs, moisten, bake in shells, one for each person. Fry in shape of oysters; or fritters; or bake as an escalop.

Sandwiches, pates, etc. may be dressed or decorated with whole or chopped oysters. Make oyster kabobs with slices of cold fried pork or bacon strung on wooden skewers, fry. Chop oysters in dressing.

REVOLVING DESK.—Fasten box for desk on a toy wagon wheel. Support hub of wheel in socket on stand.

MILKING STOOLS.—Three legged stools, topped with corn husk cushion and covered with pretty goods.

BAGS.—Scrap bag, piece bag, clothes bag, shoe bag, dust rag-bag, work bag, stocking bag. Have six of these in each room. BAZAR.

RICE JELLY.—At the New York cooking schools, they teach that rice must be steamed. If you boil your rice strain watery portion into moulds and have two dishes from it.

SOUPS AND GRAVIES.—Cook books to the contrary, science to the affirmative, don't throw away any water in which things have been boiled, and do not soak vegetables and grains, use the liquors, alone, as gravies or sauces, or combined as soups.

ROAST MEATS.—Cover and bake instead; then flavor is not dissipated.

BEAN SOUP.—To warm over beans pour on hot water, one cup full to each plate served, then simmer, strain through colander, boil up with grated lemon and sliced egg.

PAPER BAGS.—Keep paper to wrap coal in when feeding fires near sick people.

STARCH.—Cover wheat bran with water, soak, strain bran out, let water evaporate and dry settlings in sun. For dark calicos, color starch with coffee or burnt substances. MRS. W.

CABINETS FOR WALLS OR FLOOR.—Nail boxes together of all shapes or

sizes, put in shelves over spokes, using all spaces above them in boxes, for shelves for papers. Stain with home-made stain of bark and leaves. Paste strips of pinked flannel to hang over edges to tops of books. Nail brackets to closed sides of boxes, and so have books or bric-a-brac all around and on top.

PASTEBOARD FAN.—Fasten with wire into a round handle, two pieces of pasteboard, sew wire on pieces, cover with silk, etc. Decorate.

POTATO SAUCE.—You always fill your stew pan with fresh cold water and let come to a boil before cooking vegetables. Leave potatoes well covered, stew until almost breakable, strain water off. Shake potatoes upside down, remove and steam. Mash fine potato scraps, pour on the potato water, stir smooth. Serve with neck of mutton and chopped egg.

UMBRELLA CASES.—Cut paper pattern to fit umbrella, make case of sateen, alpaca, silk, etc. Have several to match dresses, light or dark. Button or tie on. S. D.

OUR BOYS AND GIRLS.

ASTRONOMY—IV.

Did you never wish as you went out into a cloudless summer or winter night and looked upward through the clear, still air and saw the thousands of stars glittering in beauty in the great arch of heaven, that you were acquainted with that oldest of all the sciences which informs us of their distances, velocities and magnitudes? No doubt you have many a time, as you viewed these prominent landmarks of God's creation, been impressed with the thought of the perfection of that wisdom and the vastness of that power which set them moving in their airy places and which has kept them moving in order and harmony, through all the cycles of time. Perhaps you were not fortunate enough to have some one who had learned all about these interesting objects to talk kindly to you about them, and who tried to make it possible for you, by easy lessons and familiar explanations, to become very fond of their contemplation and study.

Very much of after progress and success in any scientific pursuit depends upon the kind of start one has, and lucky is the boy or girl whose teacher is thoroughly in love with whatever he is teaching, and takes delight in imparting the knowledge he has gained. Generally too, those teachers are the best who have their information by hard delving and reliance upon their own efforts, for they well remember the trials by which they were beset in their own onward course, and how they kept faithfully on, overcoming little by little, but surely, many a perplexing doubt and hindering difficulty, until looking back over the way, they saw the rugged course smooth, and all things appearing clear and easy to comprehend. So, they are all the better able to help others who are hopefully and eagerly beginning the untried paths which they have trodden. And this is the idea which will be continually kept in view by the writer of these chapters as he goes on unfolding from time to time,

in THE FARMER, for the comprehension of its young and old readers, some of the wonders of the starry heavens.

Did you ever read of the shepherds of ancient Chaldea? Chaldea was that famous country of Asia, lying between the great river Euphrates and Tigris, which pour their united water into the Persian Gulf, one of the arms of Arabian Sea. One of its great cities was Babylon, where was builded The Tower of Babel, of which you may read in the eleventh chapter of the Book of Genesis.

Well, these shepherds as they guarded the folds of their flocks from the attacks of lions and other beasts of prey through the silent hours of the night, were naturally led to observe the stars and planets in the great arch above them, and which in that Oriental region of cloudless skies and serene atmosphere shone down with marvelous brilliancy, inviting to contemplation, study and reflection. By constant and attentive observations they gradually found out many important facts concerning the heavenly bodies, which came to be the basis or beginnings of our present advanced knowledge of Astronomy.

This was a long time ago—about two thousand years after the birth of our first parent Adam, and two thousand years before the coming of Christ—or in other words, about four thousand years before the time in which we are now living. The patriarch Abraham was a native of Chaldea and learned in the science of the stars. You can read about him in the twelfth and thirteenth chapters of Genesis. And now I would suggest, that every boy and girl who reads this chapter, turn to a map of Asia, and look for the region of Old Chaldea, situated between the Euphrates and the Tigris rivers, and find the countries by which it is bounded on the north, east and west, and study the map well enough to get a correct idea of its geographical position with relation to the other neighboring countries of Asia, Africa and Europe, and also consult a good book of ancient history, and read carefully all about the rise and fall of the Babylonian Empire. It will be a very entertaining and instructive way of passing one of the long evenings.

BRIEF NEWS SUMMARY.

FOREIGN.—A battle between the Chilians and insurgents occurred in the harbor of Valparaiso—Bismarck celebrated his 76th birthday—A massacre of British troops occurred in India, and a revolt of some proportion is impending—Earl Granville, the liberal leader, died—The pope has been ill, but is better—Thomas Charles Baring, M. P. for London, is dead—The Cunards will build two new steamships to cross the Atlantic in five days—Russia is making war-like preparations, and it is believed an alliance has been formed between her and France—The Parnellite candidate in the North Sligo contest for a member of Parliament was defeated by the McCarthyite nominee by a majority of 780—In a coal mine at Apedale, Staffordshire, Eng., ten persons were killed by an explosion of fire-damp—The King of Greece will abdicate his throne and reside in England—U. S. District Attorney Ensor has recommended that the sentence of the Navassa rioters be commuted to imprisonment for life.

GENERAL.—Baron Fava, the Italian minister, was recalled by his government owing to the New Orleans affair; there was a great sensation at the national capital, but Secretary Blaine's sturdy and dignified pre-

sensation of the matter quieted things down, and later dispatches from the Italian government were much more conciliatory. The ship Aguan, carrying Warner Miller and party to Nicaragua, was wrecked on a reef 200 miles north of Grayton. Steamers went to the rescue and all were saved. Seven strikers were killed and 40 wounded in a fight at the Pennsylvania coke mines. Rev. Dr. Howard Crosby, the reformer, of New York, died. In the Rhode Island election there was no choice by popular vote, and State officers will be elected by the Legislature, which is Republican. Michigan went Republican by about 5,000. Chicago elected a Republican Mayor, Elmer Washburne, there being five candidates. Indian soldier-recruiting is difficult work. A big storm did great damage in Boston and Massachusetts Bay. P. T. Barnum, died. It is proposed to consolidate the cities of New York, Brooklyn and Staten Island into one great city. The free sugar clause of the McKinley act took effect April 1st, and prices dropped 3 cents. General Albert Pike, a prominent Mason and Chief of the Scottish Rite, is dead. Sir Charles Tupper and officers of the Canadian cabinet visited Washington to consult with Secretary Blaine on reciprocity matters, but the discussion was deferred. Governor Fowle, of North Carolina, died of apoplexy. The President issued his proclamation warning all persons against entering Bering Sea for the purpose of catching fur-bearing animals. The patent centennial celebration was held in Washington yesterday. President Harrison delivering the opening address. The jury in the case of Charles E. Kincaid, charged with the murder of ex-Congressman William P. Taulbee, rendered a verdict of not guilty. H. Nobecker, of Indiana, is to succeed J. N. Huston as United States Treasurer. The New York Tribune celebrated its fiftieth anniversary. Anna Dickinson, the writer and lecturer, claims to have been illegally confined in an insane asylum.

MARYLAND.—Governor Jackson appointed Col. H. Kyd Douglas associate judge of the fourth circuit in place of Judge Syoster, deceased. W. D. Pentland's dwellinghouse, near Snow Hill, was destroyed by fire. Richard Baldwin has been elected treasurer of Anne Arundel county in place of H. B. Gault. The oystermen and citizens of Cambridge, in mass-meeting, protested against giving corporations and capitalists control of the public oyster grounds of the State. Andrew J. Clark, superintendent American Coal Company, at Lonaconing, died. The German Baptists, or Dunkards, are about to build an immense Tabernacle at Hagers-town for their June meeting. The Baltimore city comptroller says farmers who sell grass to feed stock in the city, or who sell produce without hawking it through the streets, need not get vendors' licenses. Joseph A. Thomas, a lawyer, was arrested on a bench warrant, charging him with forgery, and was released on \$2,500 bail. Col. John F. Hoy, the temperance advocate, and Dr. Thomas Chase, of Annapolis, Geo. Small, merchant, I. Nevitt Steele lawyer, and Jas. Carey Coale, insurance man, are dead.

BALTIMORE MARKETS—April 14.

BREADSTUFFS.

Flour.—Quiet, but firm. We quote:
City Mills Super..... 3.25a 3.35
Rio Extra..... 5.35a 5.50
Baltimore High Grade Family..... 3.50a 3.60
Western Winter Wheat Super..... 3.25a 3.35
Western Winter Wheat Extra..... 3.90a 4.50
Western Winter Wheat Family..... 4.75a 5.25
Spring Wheat Patent..... 5.50a 5.85
Rye Flour..... 4.30a 5.25
Hominy..... 4.00a 4.25
Hominy Grits..... 4.00a 4.25
Cornmeal, per 100 lbs..... 1.00a 1.75
Wheat.—Southern quiet; fultz selling at 110a 115 cts; longberry at 11a 116 cts. Western firm, No. 2 red spot selling at 113 cts; May 113 cts.
Corn.—Southern steady, white and yellow selling at 78 cts. Western quiet at 75 cts. for mixed spot.
Oats.—Firm. We quote Western white 62a 63 cts.; ungraded Southern and Penna. 60a 62 cts.
Rye.—Quiet. Choice Western 65a 68 cts.; good to prime 60a 63 cts.; common to fair 55a 58 cts.
Hay and Straw.—Hay steady and firm. Choice timothy, @12.00; good to prime, 11.00a 15.00; fair to good mixed, 9.50a 10.50; common and inferior, 7.50a 8.00. Clover Hay 8.50a 9.50; Cut Hay, choice grades city standard brands 11.00a 12.00; New York cut 10.50a 11.00. Straw steady and firm. Rye in carloads 16.00a 17.00 for large bales in sheaves, 10.50a 11.50 for blocks; Wheat 8.00a 9.00, and Oats 10.00a 11.00 per ton in blocks. Short chaffy stock \$1 per ton. At scales.—Hay—Timothy 10a 13, Clover Hay 8a 10 per ton. Straw—Wheat 8a, Rye 14a 17, Oats 9a per ton. Ear Corn 1.00a 1.15 per bbl.
Mill Feed.—Western bran light, 12a 13 lbs., 25.50a 27.00; do. medium, 14a 16 lbs., 25.50a 26.00;

heavy, over 19 lbs., 23.50a 25.00, and Middlings 24.50, all on track. City Mills Middlings 27 per ton sacked and delivered.

Provisions.—Sugar-pickled Shoulders 6 1/2 cents; smoked sugar-cured Shoulders 7 1/2 cents; sugar-cured Breasts 8 1/2 cents; canvassed and uncanvassed Hams, small averages, 11 1/2 cents; large averages 11 cents per lb. Mess Pork, old, 12.50, and do. new, 14.00 per bbl. Lard, best refined, pure, 8 1/2 cents per lb.

Butter.—Firm. Fancy creamery jobbing at 27 cents, good to choice creamery 25a 26 cents per lb. Roll Butter, fine 22a 23 cts., choice 20a 21 cents per lb. Store-packed 31a 32 cts., and creamery Prints 26 cents per lb.

Cheese.—We quote New York State choice full cream 12a 12 1/2 cts.; prime full cream 11 1/2a 11 3/4 cts.; perfection New York flats, 30 to 35 lbs. size, 12a 12 1/2 cts.

Eggs.—Steady at 14 cts. per dozen for choice stock. Duck eggs 20 cts., and Goose Eggs 30a 35 cts. per dozen.

Seeds.—Choice to fancy new Western Cloverseed 7 1/2a 8 cts. per lb., prime do., 7 1/4a 7 3/4 cts. per carload lots. Timothyseed 1.35a 1.45 for prime in carload lots of Western. Nearby, 1.10a 1.25. Flaxseed, sieved, 1.35a 1.45 per bushel, as to quality. Orchard grass 1.10a 1.15 per bushel.

Tobacco.—Quiet. The receipts, though liberal, being of less desirable grades. We quote Maryland—Common and frosted, per 100 lbs., 1.00a 1.50; sound common, 2a 3; good common, 4a 5; middling 6a 8; good to fine red, 9a 11; fancy, 12a 13; upper country, 3a 30; ground leaves, 1a 2.

Wool.—Dull and nominal at quotations: Good unwashed 23a 25 cts., tub-washed 22a 25 cts., pulled 20a 25 cts., and Merino 18a 20 cts. per lb.

LIVE STOCK.

Beef Cattle.—Active and strong, with quotations as follows: Best Beefves 5.37a 5.50, those generally rated first quality 4.62a 5.12 1/2, medium or good fair quality 4.75a 4.87 1/2, and ordinary thin Steers, Oxen and Cows 2.00a 3.25 per 100 lbs.

Sheep and Lambs.—In fair demand. We quote wool Sheep at 4a 4 1/2 cts. per lb. gross, and clipped sheep at 3a 3 1/2 cts. Fall Lambs 6a 7 1/2 cts., and Spring Lambs 7a 10 cts. per lb. gross.

Pigs.—Active. Fair to good hogs selling at 7a 7 1/2 cts., rough hogs, sows and hogs at 6a 6 1/2 cts., net.

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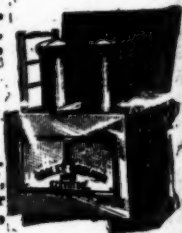
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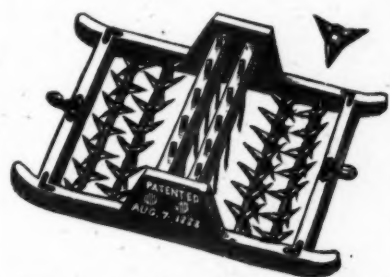
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